AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning on page 2, line 11, as follows:

The present invention has been made under the above-described circumstances. It is, therefore, an object of the present invention to provide an electric wiring simulation device capable of making a simulation as to whether or not the protecting part of an electric wiring is fused and whether or not the wiring smokes and to provide a recording medium <u>for</u> recording a simulation program for the electric wiring simulation device.

Please amend the paragraph beginning on page 3, line 12, as follows:

The third aspect of the invention provides a recording medium <u>for</u> recording a simulation program for an electric wiring simulation device simulating characteristics of an electric wiring while the electric wiring is short-circuited, the <u>simulation program recorded on the</u> recording medium comprising: a storage <u>process</u> ~~processing~~ for storing parts information on parts and wirings constituting a test object circuit inputted as a simulation object, discharge characteristics of a power supply, current-prearcing time characteristics of protecting parts and current-smoking time characteristics of the wirings, in a data base; an assigned path searching <u>process</u> ~~processing~~ for searching an assigned path between a short-circuit point and the power supply when the short-circuit point is assigned on the test object circuit; a current value calculating <u>process</u> ~~processing~~ for calculating a resistance value on the assigned path searched in the assigned path searching processing, and for calculating a short-circuit current value based on the resistance value and the discharge characteristics of the power supply; and a judging <u>process</u> ~~processing~~ for judging whether each protecting part on the

assigned path is fused and whether each wiring on the assigned path smokes based on the short-circuit current value calculated in the current value calculating processing, the current-smoke time characteristics and the current-prearcing time characteristics, at unit time intervals.

Please amend the section including the paragraphs beginning on page 3, line 32, and continuing to page 4, line 25, as follows:

The fourth aspect of the invention provides a recording medium for recording a simulation program for an electric wiring simulation device simulating characteristics of an electric wiring according to the third aspect of the invention, wherein the current value calculating process processing is conducted while taking account of the resistance value during heat emission based on a change in the resistance values with respect to time, the resistance values included in the parts information.

According to the fourth aspect of the invention, it is possible to make a simulation in view of changes in resistance values due to the heating of respective parts and respective wirings.

The fifth aspect of the invention provides a [[A]]simulation program for an electric wiring simulation device simulating characteristics of an electric wiring while the electric wiring is short-circuited, the simulation program comprising: a storage code segment for storing parts information on parts and wirings constituting a test object circuit inputted as a simulation object, discharge characteristics of a power supply, current-prearcing time characteristics of protecting parts and current-smoking time characteristics of the

wirings, in a data base; an assigned path searching code segment for searching an

assigned path between a short-circuit point and the power supply when the short-circuit

point is assigned on the test object circuit; a current value calculating code segment for

calculating a resistance value on the assigned path searched in the assigned path

searching code segment, and for calculating a short-circuit current value based on the

resistance value and the discharge characteristics of the power supply; and a judging

code segment for judging whether each protecting part on the assigned path is fused

and whether each wiring on the assigned path smokes based on the short-circuit

current value calculated in the current value calculating code segment, the current-

smoke time characteristics and the current-prearcing time characteristics, at unit time

intervals.

Please amend the paragraph beginning on page 5, line 10, as follows:

Fig. 3 is a flow chart for describing simulation process ~~processings~~ for the electric

wiring simulation device 1 shown in Fig. 2;

Please amend the section including the paragraphs beginning on page 6, line 16,

and continuing to page 7, line 17, as follows:

As shown in Fig. 2, the electric wiring simulation device 1 in this embodiment

comprising an input device 2 inputting instructions from an operator responsible for an

electric wiring simulation, a processing device 3 executing electric wiring simulation

processes ~~processings~~, a characteristics information data base 4 storing information on

respective parts and wirings necessary for the simulation processes ~~processings~~, and a display 5 outputting simulation input screens and simulation results.

The processing device 3 includes an assigned path searching unit 11 searching an assigned path between a short-circuit point on a test object circuit inputted as a simulation object and a power supply when the operator assigns this short-circuit point, a current value calculating unit 12 calculating a resistance value on the searched assigned path, and calculating a short-circuit current value based on this resistance value and the discharge characteristics of the power supply, and a judging unit 13 judging whether or not each protecting part on the assigned path is fused and each wiring on the assigned path smokes based on this short-circuit resistance value, current-smoke time characteristics and current-prearcing time characteristics at unit time intervals. The processing device 3 is constituted by an ordinary computer system including a CPU for conducting various processes ~~processings~~ and a storage unit storing instructions for the respective processes ~~processings~~. The instructions and timing restrictions for the respective processes ~~processings~~ conducted by the processing device 3 are held by the storage unit and loaded to and executed by the CPU as required.

The characteristics information data base 4 stores parts information on parts and wirings constituting the test object circuit, the discharge characteristics of the power supply such as a buttery, the current-prearcing time characteristics of the protecting parts such as a fuse and a fusible link and the current-smoke time characteristics of the respective wirings.

A simulation process ~~processing~~ conducted by the electric wiring simulation

device will be described based on the flow chart of Fig. 3.

When a simulation process ~~processing~~ starts, an input screen showing an

operation menu is displayed on the display 5 as shown in Fig. 4 (in a step S201). The

operation menu includes File (F), Part (P), circuit Bifurcation (B) and circuit Confluence

(C), Wire (W), ET Cetera (ETC), Edition (E), Comprehensive Edition (CE), Function

(FC), Image Processing (IP), Master Maintenance (MM), Reduced-size Display (RD)

and Characteristics Display (CD).

Please amend the paragraph beginning on page 7, line 32, and continuing to

page 8, line 3, as follows:

The above-described process ~~processing~~ is repeatedly carried out until the test

object circuit is formed (in a step S205) and the test object circuit shown in Fig. 8 is

formed. Relays and switches on the test object circuit are changed to thereby set the

circuit for making a simulation (in a step S206).

Please amend the paragraph beginning on page 10, line 16, as follows:

If the progress time does not satisfy the set time, the short-circuit current value in

the next unit time is calculated (in a step S217) and the process ~~processing~~ after the

step S213 is repeated. The short-circuit current value in the next unit time is obtained

as follows. A discharge voltage after t (sec) is read from the discharge characteristics of

the power supply stored in the characteristics information data base 4. Furthermore,

the resistance values of the respective parts and respective wirings after t (sec) are

read from the part information. The short-circuit current value is calculated based on the voltage value and the resistance values. The resistance values after t (sec) are calculated in light of a change in respective part and wirings due to the heat emission of the parts and wirings, and the resistance values are stored in the characteristics information data base 4 as parts information.